RHODE ISLAND RENEWABLE ENERGY FUND

REQUEST FOR PROPOSAL FOR THE SUBMITTAL OF BIDS TO PROVIDE AND INSTALL SOLAR ELECTRIC (PHOTOVOLTAIC) SYSTEMS AND DATA ACQUISITION SYSTEMS FOR THE SOLAR ON SCHOOLS INITIATIVE

April 12, 2006

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1. SCOPE OF PROJECT

The Rhode Island Renewable Energy Fund (Fund) is seeking bids through its Solar on Schools Initiative for the purchase and installation of Solar Electric (Photovoltaic) systems and associated Data Acquisition and Educational Interface systems (DAEIS) at eight schools. Each school is to receive a nominal 2,000 watt (DC) grid interconnected system without battery backup. One system is to be installed by June 15, 2006, the next three systems by September 15, 2006, and the remaining four systems by March 15, 2007. One of the systems is for a school under construction, and may be delayed due to circumstances beyond the control of this Request for Proposal (RFP).

Each system will receive a Data Acquisition and Educational Interface System that will provide system performance information and data for educational purposes. This system is to be installed by the winning Bidder(s). It is the intention of this RFP to select more than one Contractor if deemed in the interest of the Fund.

2. DEFINITIONS

Base Bid: The bid to install, commission, and provide initial support to ensure the Solar Electric and DAEIS is operating and performing properly.

Bid Applicant or Bidder: The entity responding to this RFP that purchases, installs, verifies and warrantees complete Solar Electric system and Data Acquisition and Educational Interface system installation.

Commissioning: Documented process that determines the Solar Electric system and the Data Acquisition and Educational Interface system are operating as required by this RFP.

Contractor(s): The Bid Applicant(s) who has\have submitted accepted bid(s).

Data Acquisition and Educational Interface System (DAEIS): The hardware required to gather information regarding the operation of the solar electric system, and the software necessary to interpret and deliver the information in a useful manner. This includes the software that allows the information gathered by the DAEIS to be used in a manner that facilitates the use of the data by educators, students, and other interested parties to learn about the way in which solar electric systems operate, and the benefits derived from their operation.

Host Facility: The school or site where the Solar Electric system and DAEIS system is located, and the Owner of the solar electric system.

NEC: National Electric Code. NEC 2005 is in effect in Rhode Island.

Owner: The Host Facility will be the Owner.

Purchasing Agent: The Rhode Island Renewable Energy Fund is the Purchasing Agent, acting on behalf of the Host Facility through this RFP to entertain bids for the purchase and installation of a Solar Electric system and DAEIS system for the Host Facility.

Rhode Island Renewable Energy Fund (RIREF) (Fund): The Rhode Island Renewable Energy Fund (RIREF), initially created through the Utility Restructuring Act of 1996, generates funding from a surcharge of 0.3 mills per kilowatt-hour on electricity consumption (System Benefits Charge) in Rhode Island in order to promote renewable energy in Rhode Island. The mandate of the Fund includes promoting the understanding and use of renewable energy technologies that harness wind, solar, low impact hydropower (including ocean power), biomass and geothermal resources. The Fund is administered by the State Energy Office in consultation with the Rhode Island Renewable Energy Fund Advisory Board. The Advisory Board consists of 15 voting and 5 nonvoting members from environmental advocacy groups, state and federal government energy and environmental agencies, industry, universities, electric utilities, etc.

Solar Electric system: Nominal 2,000 watt (DC) grid interconnected without battery backup photovoltaic system.

3. INTENT OF REQUEST FOR PROPOSAL

It is the intent of this RFP to award a contract or contracts for the purchase and installation of eight (8) Solar Electric and DAEIS systems. Location and site specific information is located in Appendix A.

The location of the components has been determined by either the Host Facility, or in consultation by RIREF with various Host Facility personnel, and may not be changed without mutual consent between the Host Facility, RIREF, and the Contractor.

4. SUBMITTING COMPLETED PROPOSALS TO RIREF

4A. Bid Submittal Forms

Proposals submitted in response shall utilize the forms provided in Appendix B. Electronic versions of this form can be obtained by emailing Julia Capobianco: ***JulieC@gw.doa.state.ri.us***.

4B. Number of Copies to be Submitted

Five (5) identical copies are to be submitted. One copy shall be marked "Original" with authorization signatures in ink.

4C. Bid Due Date, Delivery Location and Bid Identification Requirements

DUE DATE AND TIME
Bids are due on May 10th, 2006, 3:00pm.

DELIVERY LOCATION
By Mail:
Bids are to be mailed to:

Janice McClanaghan, Chief of Energy and Energy Services
Rhode Island State Energy Office
Department of Administration
One Capitol Hill
Providence, RI 02908-5855

By Courier:
Bids may also be hand delivered to:

Janice McClanaghan, Chief of Energy and Energy Services
Rhode Island State Energy Office
Department of Administration
One Capitol Hill
Providence, RI 02908-5855

Please note the Bid Applicant is responsible for obtaining and providing proof from the Rhode Island State Purchasing Office that the bid was submitted on time.

BID IDENTIFICATION REQUIREMENTS
Bids are to be placed in envelope to the above address with the following identifying words:

RHODE ISLAND RENEWABLE ENERGY FUND
SOLAR ON SCHOOLS REQUEST FOR PROPOSAL BID

5. TERMS AND CONDITIONS GOVERNING RESPONSES TO THIS RFP

5A. Completeness and Adherence to RFP Instructions:

Bid Applicants are advised to review all sections of this RFP carefully and to follow instructions completely, as failure to offer a complete submission as described elsewhere herein may result in rejection of the proposal and disqualification of the Bid Applicant from further participation.

Alternative approaches and/or methodologies to accomplish the desired or intended results of this proposal are welcomed and are specifically requested in sections of this RFP. However, these are not

requested as a substitute to the requirements set forth in this RFP but as an optional addition to a Bid Applicant's proposal to the Fund. With the exception of where specifically invited to do so, proposals that depart from or materially alter the terms, requirements, or scope of work defined by this RFP may be rejected as being non-responsive.

5B. Deadline, Format, and Location of Proposal Submission:

Proposals delivered to locations other than Janice McClanaghan at the Rhode Island State Energy Office at the date and time noted in Section 4.C. will be determined to be late and will not be considered. Proposals FAXED or electronically submitted to the Rhode Island State Energy Office WILL NOT BE CONSIDERED.

5C. Incurred Expenses

The Fund is not responsible for expenses incurred by the Bid Applicant to develop and submit a Proposal. Any costs incurred from site visits for discussions or negotiations are also entirely the responsibility of the Bid Applicant, unless otherwise specified herein.

5D. Ownership and Syndication of Proposals

Responses will be reviewed by a subcommittee of the Fund's Advisory Board, which may include the Fund's consultants. Information of a commercially sensitive nature, as defined in Section 38-2-2(4)(B) of the Rhode Island General Law, (namely, trade secrets and commercial or financial information …which is of a privileged or confidential nature) shall be submitted under the following procedure only. Describe the nature of the information and the reasoning for treating it as confidential, and submit it in a separate, sealed envelope marketed "confidential information", along with whatever information is necessary to clearly identify it as associated with your submission, including contact information. On receipt of advice from the Fund that such justification is consistent with applicable state law allowing confidential treatment of the enclosed material, the Fund will commit to treating such information as confidential and restrict access to review committee members only, under condition of confidentiality. Otherwise, you will be given the option of having the information returned unopened, or having it reviewed along with the remainder of your response without confidential treatment. The Fund will treat only such information clearly labeled as commercially sensitive as confidential. Such materials will be returned upon request. The Fund reserves the right to not select any submitted bid. The Fund shall have the right to waive minor informalities and irregularities in a bid received and to accept the bid or bids which, in the Purchasing Agent's judgment, is in the best interest of the Fund.

5E. Duration and Availability of Pricing

Proposals are considered to be irrevocable for a period of not less than one hundred and twenty (120) days following the opening date, and may not be withdrawn, except with the express written permission of an authorized representative of the Fund. Due to the volatile nature of the price of photovoltaic modules, and that systems are being installed on a school that is currently under construction, we are requiring bids to be structured as follows:

Systems A, B, C, D, E, F, G (schools not under construction)

Method One: Fixed Price for installed system(s)

Method Two: Fixed Price on all costs, except modules with Variable Pricing of modules

1. Submit contractor cost of module from supplier at time of bid on supplier's letterhead and signed by an authorized representative of the supplier.
2. Submit markup percentage.
3. At time of module purchase for each project, submit supplier's price to contractor on supplier's letterhead and signed by an authorized representative of the supplier.
4. Markup percentage submitted in Step 2 will be applied.

Note: The Fund will verify any increase or decrease in module pricing.

System H (school under construction)

Method One: Fixed Price for installed system(s)

Method Two: Price per watt for installed system(s)

Method Three: Fixed Price on all costs, except modules with Variable Pricing of modules

1. Submit contractor cost of module from supplier at time of bid on supplier's letterhead and signed by an authorized representative of the supplier.
2. Submit markup percentage.
3. At time of module purchase for each project, submit supplier's price to contractor on supplier's letterhead and signed by an authorized representative of the supplier.
4. Markup percentage submitted in Step 2 will be applied.

Note: The Fund will verify any increase or decrease in module pricing.

5F. Joint Ventures

Joint ventures will be considered with the understanding that only one contractor will assume responsibility for all aspects of the work. The joint venture should be clearly indicated in the Bid Applicant's proposal, and complete details of the activities, procedures, financial responsibilities, and other related items should be clearly disclosed within the proposal.

5G. Supersede Agreement

If the Fund accepts a Bid Applicant's proposal and enters into a contract, the selected Bid Applicant will hereby agree to offer the Fund the option to terminate, with thirty (30) days notice and without penalty, all or a portion of any active contracts between the Bid Applicant and the Fund. The option to terminate other active contracts with thirty (30) days notice shall be at the sole discretion of the Fund.

5H. Statement of Non-Commitment

This RFP is not a commitment to contract with any party.

5I. Statement of Non-Exclusivity

Pursuant to the Fund's right to issue multiple awards, no contract arising from this RFP shall have an exclusivity clause.

5J. Termination Clause

Any contract arising from this RFP process may contain the stipulation that the contract may be terminated at the discretion of the RIREF with sixty (60) days written notice.

5K. Contract Dependence Upon This RFP

Any contract issued as a result of this RFP shall incorporate and refer to the provisions and intent of this RFP.

5L. Governing Law of Any Contract Arising from this RFP

The laws of the State of Rhode Island shall govern all questions relating to the execution, nature, obligation, instruction, validity and performance of this RFP and any contract arising from this agreement.

5M. Misrepresentation

In the event that a Bid Applicant intentionally and falsely represents any information provided by that Bid Applicant to the Fund, the Fund has the right to disqualify that Bid Applicant's proposal. In the event it is determined that a Contractor intentionally and falsely represented any information provided to the Fund either during proposal, award, negotiation or contracting process, the Fund has the right to terminate the contract without prior notice and the contractor shall be liable for all expenses incurred by the Fund for such termination or any action against the Fund, any of its Departments, officers, agents and/or employees by another individual resulting from the misrepresentation.

5N. Indemnification

The successful Bid Applicant agrees to indemnify and hold harmless and defend the Fund and its Departments, officers, agents and/or employees from and against, without limitation, any and all liabilities, claims, damages, penalties, forfeitures, suits, sanctions, settlements and judgments, including, without limitation all reasonable investigative fees, costs of defense, cost of suit and reasonable attorney's fees which the Fund, its Departments and/or their officers, agents and/or employees may hereinafter incur, become responsible for or pay out as a result of a settlement, judgment, order, award or otherwise arising out of death or personal injury to any person, destruction or damage to any property and/or any violation

of governmental laws, regulations, orders or to the extent caused by the successful Bid Applicant's negligence or the successful Bid Applicant's failure to perform its obligations in accordance with the terms of the contract and/or the successful Bid Applicant's approved proposal. The successful Bid Applicant will provide to the Fund prompt written notice of such claims, information and reasonable assistance, and sole authority, at the successful Bid Applicant's sole cost and expense to defend or settle any of the above types of claims made against the Fund, its Departments, their officers, agents and/or employees relating to the successful proposal or to the performance of the same.

5O. Non-Assignment

The services to be performed by the Contractor shall not be assigned, sublet or transferred except as expressly allowed by the contract, without prior written approval of the Fund, nor shall the Contractor assign any monies due under any contract entered into with RIREF pursuant to these specifications, without prior written approval by the Fund.

5P. Purchasing

Equal Employment Opportunity (RIGL 28-5.1)
§28-5.1-1 Declaration of policy.- (a) Equal opportunity and affirmative action toward its achievement is the policy of all units of Rhode Island state government, including all public and quasi-public agencies, commissions, boards and authorities, and in the classified, unclassified, and non-classified services of state employment. This policy applies in all areas where the state dollar is spent, in employment, public service, grants and financial assistance, and in state licensing and regulation. For further information, contact the Rhode Island Equal Employment Opportunity Office, at (401)222-3090.

This solicitation, and subsequent contract award (s), is governed by the State's General Conditions of Purchase, available at www.purchasing.ri.gov.

6. PROCEDURE FOR QUESTIONS REGARDING RFP

Questions regarding this RFP are to be emailed to: *JulieC@gw.doa.state.ri.us*

The closing date for questions is April 18th.

Answers will be posted within three business days to the Rhode Island Renewable Energy Fund website

http://www.riseo.state.ri.us/riref/programs/rfp.html

Confidentiality will be maintained.

7. PROCEDURE FOR CONSIDERATION/ACCEPTANCE OF ALTERNATES

Request for use of alternate components in the bid must be made using the forms in Appendix C.

8. BID APPLICANT ELIGIBILITY

Bidders eligible to bid on this project must be:

1) a registered general contractor in the State of Rhode Island
   or,
2) a registered electrical contractor in the State of Rhode Island

In addition, the bidder must demonstrate that they have:

1) installed at least two (2) 1,500 watt (DC) systems within the past 12 months, or
2) have successfully completed a PV installation training course of at least 30 hours, or
3) are North American Board of Certified Energy Practitioners (NABCEP) certified.

9. CODES AND STANDARDS REQUIREMENTS

The Solar Electric system and DAEIS system must comply with NEC and IEEE standards for the safe operation of Solar Electric and DAEIS systems. The Solar Electric system and DAEIS system must be installed in a manner that complies with applicable State of Rhode Island codes.

10. BID EVALUATION CRITERIA

1) Price per system (price includes material, labor, and support costs.)	(60%)
3) Experience/Reference	(20%)
4) Warranty of materials, and labor	(20%)
	100%

The Fund shall have the right to waive minor informalities and irregularities in a bid received and to accept bids which, in the Fund's judgment, are in the Fund's own best interests.

11. PROJECT SCHEDULE

Site Review: April 17- May 3, 2006

Bid Due Date: May 10, 2006, 3:00 pm

Bid Award Date: May 17, 2006

The Contractor(s) will be required to provide, and install fully commissioned Solar Electric system(s) and DAEIS system(s).

First System Installation Date: June 15, 2006
System A: Saint Philomena School

Next Three Systems Installation Date: September 15, 2006
System B: Middletown Public Schools
System C: Our Lady of Mount Carmel School

System D: Vartan Gregorian Elementary School at Fox Point

Next Four Systems Installations Date: March 15, 2007
System E: Coventry High School
System F: South Kingstown High School
System G: North Smithfield Junior and Senior High School
System H: Ponaganset Middle School, ***New Construction***

12. AGREEMENT

Work shall commence only after an Agreement is executed between the Purchasing Agent and the Contractor, which is based upon this Request for Proposal.

13. GENERAL CONDITIONS

13A. Work on Premises

The Contractor must comply with the requirements of the Host Facility for working on the premises. It is the responsibility of the Contractor to obtain the requirements and provide evidence of compliance to the Host Facility.

13B. Submittals

Prior to providing the Solar Electric System, submittals must be made to the Host Facility and the Fund or its designee as follows:

13.B.1. Initial Submittals

The Contractor shall submit for each Host Facility schematics showing the location of the Solar Electric components including:

A. Photovoltaic Panel Location
B. Photovoltaic Panel Mounting Method to Host Facility
C. Electrical One-Line Diagram showing:
    i. panel wiring layout with design & maximum voltage, current; panel manufacturer specification sheets
    ii. conductor & conduit type, ratings
    iii. breakers & fuses manufacturer, model, voltage rating, current rating
    iv. disconnect switches manufacturer, model, voltage rating, current rating
    v. utility/AC interconnect location and method
    vi. required Host Facility penetrations

D. DAEIS One-Line Diagram showing:
    i. location of sensors
    ii. communication cable type

iii. communication cable path
iv. location of Data Monitor
v. location of all transducers
vi. location of network interface

13.B.2. Closeout Submittals

The Contractor prior to commissioning must submit two copies of a Owner's Manual for each Host Facility with the following sections:

A. As-built schematics showing:
   a. The location of the Solar Electric System.
   b. Electrical one-line diagram showing:
      i. panel wiring layout with design & maximum voltage, current; panel manufacturer specification sheets
      ii. conductor & conduit type, ratings
      iii. breakers & fuses manufacturer, model, voltage rating, current rating
      iv. disconnect switches manufacturer, model, voltage rating, current rating
      v. utility/AC interconnect location and method

B. Contractor contact information including:
   a. Name
   b. Company Name
   c. Physical Address
   d. Phone Number
   e. Fax Number
   f. Email Address

C. Manufacturer's specification sheets of major components.
D. Warranty
E. Required Maintenance
F. Solar on Schools System Trouble Report (five copies)
G. Trouble Log for tracking planned and unplanned maintenance

13C. Permits

Necessary permits must be obtained by the Contractor when installing equipment if required. It is the responsibility of the Contractor to determine when, and which permits are required.

13D. Insurance

The Contractor shall take out and maintain throughout the period of this Contract insurance of the following minimum types and amounts:

A. Worker's Compensation and Employers Liability insurance, as required by law, covering all their employees who perform any of the obligations under the contract. If any employer or employee is not subject to workers' compensation laws of the governing State, then insurance shall be obtained voluntarily to extend to the employer and employee coverage to the same extent as though the employer or employee were subject to the workers' compensation laws.

B. Public liability insurance covering all operations under the contract shall have limits for bodily injury or death of not less than $1,000,000 each occurrence, limits for property damage

of not less than $1,000,000 each occurrence, and $2,000,000 aggregate for accidents during the policy period. This required insurance may be in a policy or policies of insurance, primary and excess including the umbrella or catastrophe form.

C. Automobile liability insurance on all motor vehicles used in connection with the contract, whether owned, non-owned, or hired, shall have limits for bodily injury or death of not less than $500,000 per person and $500,000 each occurrence and property damage limits of $500,000 for each occurrence. This required insurance may be in a policy or policies of insurance, primary and excess including the umbrella or catastrophe form.

The Contractor shall furnish one copy of each Certificate of Insurance herein required for each copy of the Agreement, which shall specifically set forth evidence of coverage required. If this insurance is written on a Comprehensive General Liability policy form, ACCORD Form 25S will be acceptable. The Contractor shall furnish copies of endorsement to the Purchasing Agent that is subsequently issued amending coverage or limits. Certificates of insurance acceptable to the Purchasing Agent shall be filed with the Purchasing Agent prior to commencement of the work.

13E. Change Orders

Work and/or materials may only deviate from the agreement by an executed Change Order. The Contractor must submit Change Order to the Fund or its designee for approval. The Change Order at a minimum must describe the work or material that is to be modified, and the cost or savings. Acceptance and execution of Change Order will be evidenced by the Fund's authorized signature.

13F. Claims and Disputes

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Purchasing Agent and Contractor arising out of or relating to the Contract. Claims shall be initiated by written notice and shall be expressly stated to be a claim.

Claims by either party shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

Pending final resolution of a Claim except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Purchasing Agent shall continue to make payments in accordance with the Contract Documents.

13G. Mediation

The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a

period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

Any Claim arising out of or related to the Contract shall be subject to mediation as a condition prior to arbitration or the institution of legal or equitable proceedings by either party.

13H. Arbitration

Claims not resolved by mediation shall be decided by arbitration which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. The demand for arbitration shall be filed in writing with the other party to the Contract and with the American Arbitration Association, and a copy shall be filed with the Purchasing Agent.

A demand for arbitration shall be made within the time limits specified in mediation. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

No person or entity other than the Purchasing Agent, Contractor or a subcontractor as identified by the Contractor shall be included to arbitration.

The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

14. SPECIFIC CONDITIONS-PHOTOVOLTAIC SYSTEM

14A. General Installation Requirements

1. All equipment is to be installed according to the manufacturer's specifications, or the governing applicable codes, whichever is more stringent. In particular, the following standards apply:

2. The Solar Electric and DAEIS system(s) shall be designed and installed to the appropriate standards of the NEC 2005 and IEEE.

3. The Solar Electric system shall have strategically located disconnects to provide visible isolation points to allow for safe work practices. The NEC dictates the requirements for these disconnect devices, allowing for essentially hazard free operation and maintenance of the electrical power equipment.

4. The Solar Electric system shall be capable of completely automatic, unattended operation, including wake-up, synchronization and disconnect.

14B. Equipment/Installation Specifications

14.B.1. Photovoltaic Array

a) Array Orientation and Location

The arrays are to be placed in the locations cited in Appendix A. The location of each array may not be changed without the mutual consent of the Host Facility, the Fund, and the Contractor. Array tilt is to be 40 degrees +-15 degrees. Shading must not reduce solar electric output more than 7% as measured on an annual basis.

b) Array Output

The total installed capacity of the system is to be rated at 2,000 watts nominal (2 kW) DC.

c) Module/Subassembly Requirements

The modules shall meet or exceed the requirements of IEEE Standard 1262-1995, Recommended Practice for Qualification of Photovoltaic (PV) Modules (April 12, 1996) and Underwriter Laboratories (UL) Standard 1703, Standard for Safety for Flat-Plate Photovoltaic Modules and Panels (May 17, 1993). The contractor shall provide a complete description of the physical properties of the PV modules, including the results of the module qualification tests. Manufacturer schematics on the modules are acceptable.

NEMA 4 corrosion-resistant junction boxes with liquid tight conduit fittings are required. Fiberglass, PVC, stainless steel, or aluminum enclosures are acceptable. Painted steel or galvanized junction boxes are not permitted.

d) Mounting Hardware

Mounting of the photovoltaic assembly will be accomplished by the use of aluminum racks, and stainless steel bolts, nut, washers, etc. These mounting requirements are also applicable to pan ballasted systems, if so specified.

The contractor is responsible for designing the array mounting, providing the array mounting hardware, pan ballasted system and installing all array hardware**.** Corrosion resistive materials shall be used. All connections are to be coated with "Never-seize" coating or equivalent.

e) Acceptable Module Characteristics

Panels must be UL listed.

14.B.2. Power Conditioning Unit(s)/Inverter(s) Specifications, Codes and Location

The Power Conditioning Units (PCUs) / Inverters are to be placed in the locations cited in Appendix A. The location may not be changed without the mutual consent of the Host Facility, RIREF, and the Contractor.

The PCUs shall be certified by Underwriters Laboratory for compliance to UL 1741. The PCU protection systems shall follow the IEEE 929 requirements, which are summarized below.

a) The PV system shall be capable of operating within the voltage limits specified in ANSI C84.1, Clause 2, Range B, utilization voltage. The inverter must sense abnormal voltage and respond. The following conditions shall be met, with voltages in RMS and measured at the Point of Common Coupling (PCC).

Voltage	Maximum Trip Time
V< 120 (V<50%)	6 cycles
120<V<212 (50%<V<87%)	120 cycles
212≤V≤254 (87%≤V≤106%)	Normal Operation
254<V<360 (106%<V<137%)	120 cycles
360<V (137%<V)	6 cycles

b) The PV system shall operate in synchronization with the utility and should have a fixed operating frequency range of 59.5-60.5 Hz. When the line frequency is outside the range of 59.5 to 60.5 Hz, the inverter must cease power transfer to the utility within 6 cycles.

c) DC injection into the AC interface at the PCC shall be less than 0.5% of rated inverter output under either normal or abnormal operating conditions.

d) The PV system output shall have low current harmonic levels to ensure that other equipment connected to the utility system suffers no adverse effects. The PV system electrical output at the PCC shall comply with IEEE Std 519-1992, Clause 10, "Recommended Practices for Individual Customers." The key requirements of this clause are summarized below:

Total harmonic current distortion shall be less than 5% of the fundamental frequency current at full system output. Each odd individual harmonic shall be limited to the percentages listed in the following table. The limits in this table are a percentage of the fundamental frequency current at full system output. Even harmonics in these ranges shall be less than 25% of the odd harmonic limits listed.

Harmonics	Distortion Limit
3rd through 10th	4.0%
11th through 16th	2.0%
17th through 22nd	1.5%
23rd through 33rd	0.6%
above the 33rd	0.3%

e) At the PPC, the Solar Electric system shall operate at a power factor greater than 0.85 (lagging or leading) when output is greater than 10% of rating.

f) The Solar Electric system and interface equipment shall be grounded in accordance with applicable local codes.

g) The Solar Electric system shall have strategically located disconnects to provide visible isolation points to allow for safe work practices. The NEC dictates the requirements for these disconnect devices, allowing for essentially hazard free operation and maintenance of the electrical power equipment.

h) The system shall be capable of completely automatic, unattended operation, including wake-up, synchronization and disconnect.

i) PCU systems shall include all necessary self-protective features to protect the arrays and PCU from damage in the event of component failure or from parameters beyond safe range due to internal or external causes. Clearing of fuses shall not be the normal means of response to external line transients. Faults due to malfunctions within the PCU or PV system equipment, including commutation failures, shall be cleared by the PV system protection device and not by utility or customer protection devices.

j) Excessive solar power (solar enhancement) - During partly cloudy and cool conditions, the PV array may, for a brief period of time (< 5 minutes), operate above the system rating. The PCU should, at a minimum, protect itself from excessive power flow, or if possible, back the PV system off the maximum power point to allow continuous operation during solar enhancement. The PCU should resume normal operation automatically after such a solar enhancement has passed.

14.B.3. PCU Non Electrical Performance

The PCU shall not produce excessive Electromagnetic Interference (EMI) and shall be in compliance with FCC EMI regulations/guidelines.

The PCU shall be designed to minimize audible noise when the enclosure door is closed and minimize the transmission of noise/vibration through the enclosure mounts. The maximum PCU audible noise at a point two (2) meters in front of the PCU shall be no more than 52 dba.

14.B.4. Battery System

No battery system is specified for this facility.

14.B.5. Balance-of-System Components

All source circuits shall include protective features, such as blocking diodes, fuses, and voltage-limiting surge protection devices, unless it can be demonstrated that they are not needed to protect the source circuit. The contractor shall design for the installation of these components in a manner to allow convenient and safe replacement. The design basis shall address aging and maximum voltage and current characteristics of such devices.

Bypass and blocking diodes shall be included, unless they are included with photovoltaic module.

14.B.6. Wiring

a) All wiring shall be identified and specified. Each run shall be assumed continuous. Splices are not allowed. Wiring must comply per NEC.

b) Each conductor shall have identifying labels or markings on both ends. All field wiring between equipment shall be color-coded per NEC standards.

c) Control and instrumentation wiring shall be separated from power and high-voltage wiring, if possible, by use of separate compartments or enclosures or by use of separate wire-ways and appropriate barrier strips within a common enclosure.

14.B.7. Utility Interconnection Point

Output from the photovoltaic system shall interface with the Host Facility utility electrical system at a location mutually agreed to between the Host Facility and the Contractor.

Data Acquisition and Educational Interface System Component

15. SPECIFIC CONDITIONS-DATA ACQUISITION AND EDUCATIONAL INTERFACE SYSTEM (DAEIS)

15A. General Description

Each system will have a Heliotronics' Feynman Data Acquisition and Educational Interface System (DAEIS) installed. The DAEIS will obtain operational data from the solar electric system and store this data on a dedicated computer provided by the Host Facility. It has been the experience of Heliotronics, the Rhode Island Renewable Energy Fund, and other similar funds, that it is less costly and simpler to install the DAEIS at the same time as the solar electric system.

15B. Responsibility of Contractor to Supply Materials and Install DAEIS

The contractor for each site will be responsible for installing the DAEIS. The DAEIS equipment will be provided by Heliotronics to the Contractor. The equipment not supplied by Heliotronics, and to be supplied by the Contractor is:

ITEM 1: Home run from meteorological cluster to data logger: 8 conductor shielded twisted pair AWG 22 or 24. Note: Shield is required for the cable, not for each individual pair. Recommended temperature rating is –40 to + 85 or higher. Example: Alpha Wire 45496

ITEM 2: Designated conduit run from meteorological cluster to data logger (separate from PV power cables). Large enough to accommodate cable in item 1 above.

ITEM 3: Communications line from logger to the computer. It is assumed that the logger and the computer are indoors and in the same building. (4) conductor CAT 5 cable is recommended.

ITEM 4: Electrical boxes for current/voltage transducers: (2) ten by ten inch steel electrical boxes.

This is believed to be a comprehensive list, but there may be miscellaneous equipment in addition to the above.

15C. Installing the DAEIS

The installation manual is included in Appendix F. Heliotronics is available to answer your installation questions so that you may understand how to install, and therefore bid the equipment installation.

The contacts for Heliotronics are:

Clayton Handleman, President, Heliotronics, Inc., 1083 Main St, Hingham, MA 02043
Phone Number: (781) 749 - 9593
Fax: (781) 749 – 3406
chandleman@heliotronics.com

Matthew Arner, Manager of Business Development, Heliotronics, Inc.
Phone Number: (508) 435 - 3032
Fax: (508) 435 - 3017
marner@heliotronics.com

16. ACCEPTANCE TESTS

16A. Photovoltaic System

The Contractor shall perform an Acceptance Test to confirm that the photovoltaic system is operating properly. RIREF will then conduct a Commissioning Test after receiving notification that the system installation is complete and has undergone the Contractor's Photovoltaic System Acceptance Test. It is required that personnel from the Host Facility or their designee witness these acceptance tests. The Contractor's Photovoltaic Acceptance Test forms are in Appendix G.

16B. DAEIS System

The Contractor shall perform an Acceptance Test to confirm the DAEIS is operating properly. RIREF will then conduct a Commissioning test after receiving notification that the DAEIS system is complete and has undergone the Contractor's DAEIS Acceptance Test.

The DAEIS will be commissioned as a process separate from the commissioning of the photovoltaic system. The Contractor is to complete the forms in Appendix H once the system is installed. In order to facilitate Heliotronics assisting the Contractor if problems do arise, we are requiring the following photographs to be taken at the time of installation. These photos will allow Heliotronics to provide direction on correcting any installation errors. These photos are to be placed on a CD and provided to RIREF with the Request for Commissioning.

Photo 1, Electrical Room General Setup: Pictures should include inverter, data logger, kWh meter IV transducers, and disconnect switches.

Photo 2 a b c, Inside Data Logger: Approximately three pictures from different angles to assure that all of the connections can be seen.
Photo 3, Behind the Computer: Picture of the terminal block on the RS 232 to RS 422 converter so that the communication connection can be seen.
Photo 4, Meteorological Cluster: Picture of the terminal block so that all connections can be seen.
Photo 5, SunServer(TM) Calibration and Configuration Page: Picture of the computer screen when the SunServer(TM) calibration and configuration page is on the computer screen.
Photo 6, SunServer(TM) Internet Configuration Page: Picture of the computer screen when the SunServer(TM) Internet configuration page is on the computer screen.

The Contractor's DAEIS Acceptance Test forms are in Appendix H.

17. SERVICE AND WARRANTY

The Contractor shall provide a two-year system labor warranty at a minimum and two-year maintenance service. This warranty shall include all parts, shipping, labor, and on-site service.

The Contractor shall be responsible for performing all scheduled maintenance including semi-annual system checks, and /or any other required scheduled maintenance activity as required by the manufacturers of the components used to maintain warranties.

The Host Facility shall report system problems to the Contractor as they are discovered. A *Solar on Schools System Trouble Report* shall be submitted by the Host Facility to the Contractor. The *Solar on Schools System Trouble Report* is in Appendix I, and will be included in the Project Manual.

18. DOCUMENTATION

See Section 13B

19. PAYMENT SCHEDULE

For each system:

1. Progress Invoice for the purchase of materials as evidenced by a Purchase Order/Packing Slip, and a letter from the Contractor that the materials have been received, are at the Host Facility site, and will be used for the Host Facility project. Payment within forty-five (45) days of the invoice submitted.

2. Final Invoice for the remaining balance of the total bid price. Final Invoice processing is contingent upon successful commissioning of the Solar Electric and DAEIS system. Payment within forty-five (45) days of the invoice submitted.

APPENDIX A

SITE IDENTIFICATION AND CONTACT INFORMATION

Site A

Location:

Saint Philomena School
324 Cory's Lane
Portsmouth, RI 02871

Designated Lead Contact:

Judy Fitzgerald
(401)683-0268

Alternate Contacts:

Sr. Ann Marie Walsh, F.C.J., Principal
(401)683-0268

Catherine Tobiassen, Network Administrator
(401)683-0268

Site Access Contact
Tony DeCastro
(401)683-0268, x. 130

Array Location:

Inverter Location: Room 5b, in storage closet, or on wall next to storage closet door. Confirm with teacher.

Network Interface Location: At same location as Inverter

AC Electrical Interconnection: Electric Panel in Electrical/Mechanical Room next to Room 5b.

Site B

Location:

Middletown Public Schools, Alternate Learning Program
26 Oliphant Lane
Middletown, RI 02842

Designated Lead Contact:

David Pritchard
(401)847-3916

Alternate Contacts:

Edward Collins, Facilities Director
(401)847-3916

Linda Savastano, Network Administrator
(401)849-2122

Site Access Contact:
Edward Collins, Facilities Director
(401)847-3916

Array Location:

Note, Facility Director wants array anchored through roof into the concrete beams, or a similarly secured manner.

Inverter Location: Utility/Storage closet on second floor.

Network Interface Location: Utility/Storage closet on second floor. School will bring network drop in.

AC Electrical Interconnection: Electric Panel in Utility Storage Closet

Site C

Location:

Our Lady of Mount Carmel School
127 State Street
Bristol, RI 02809

Designated Lead Contact:

Lynne Towers
(401)253-7656

Alternate Contacts:

Sister Ellamae McDonald, M.P.F., Principal
(401)253-8455

Joy Southworth, Network Administrator
(401)433-0026

Site Access Contact:

Irene Znuj
(401)935-9267

Array Location:
Southern edge of roof on entrance side of building.

Inverter Location:
Possible Location: Classroom. Discuss with Lynn Towers.

Network Interface Location: Classroom. Discuss with Lynn Towers

AC Electrical Interconnection: To be proposed by Contractor and agreed to by Host Facility.

Site D

Location:

Vartan Gregorian Elementary School at Fox Point
455 Wickenden Street
Providence, RI 02903

Designated Lead Contact:

Jackie Fish
(401)456-9377

Alternate Contacts:

Anthony DeAngelis, Principal
(401)456-1744

Mark Anderson, Network Administrator
(401)499-8480

Site Access Contact:
Anthony DeAngelis, Principal
(401)456-1744

Panel Location:
The preferred location is the flat roof closest to the main street. The back of the panels will face the street.

Inverter Location:
The preferred location for the inverter is the faculty lounge.

Network Interface Location:
The preferred location for the DAEIS and network interface is the faculty lounge.

AC Electrical Interconnection: Propose room adjacent to the faculty lounge.

Site E

Location:

Coventry High School
40 Reservoir Road
Coventry, RI 02816

Designated Lead Contacts:

Peter Stetson
(401)822-9499

John Canole
(401)822-9499

Alternate Contacts:

Steven C. Knowlton, Principal
(401)822-9499

Jim Murphy, Network Administrator
(401)822-9429

Panel Location: Discuss with Peter Stetson

Inverter Location: Discuss with Peter Stetson

Network Interface Location: Discuss with Peter Stetson

AC Electrical Interconnection: Discuss with Peter Stetson

Site F

Location:

South Kingstown High School
215 Columbia Street
Wakefield, RI 02879

Designated Lead Contact:

Jeff Johnson
(401)789-4570

Alternate Contact:

John Bilotta, Network Administrator
(401)360-1304

Site Access Contact:

Bob McCarthy
(401)360-1150

Panel Location:

Inverter Location:

Network Interface Location:

AC Electrical Interconnection:

Site G

Location:

North Smithfield Junior and Senior High School
412 Greenville Road
North Smithfield, RI 02896

Designated Lead Contact:

William Space
(401)766-2500

Alternate Contacts:

David Silva, Interim Principal
(401)766-2500

Eric Butash, Network Administrator
(401)766-2500

Array Location:

Inverter Location: Storage Closet in Science Classroom

Network Interface Location: Storage Closet in Science Classroom

AC Electrical Interconnection: AC Electrical Panels are in hallway across from Science Classroom.

Site H

Location:

Ponaganset Middle School
91 Anan Wade Road
North Scituate, RI 02857

Designated Lead Contact:

Ross McCurdy
(401)647-3377, ext. 231-7986

Alternate Contacts:

Patricia Marcotte, Principal
(401)647-3361

Mike Marseglia, Network Administrator
(401)647-3377, ext. 301

Array Location: New construction, to be determined

Inverter Location: New construction, to be determined

Network Interface Location: New construction, to be determined

APPENDIX B

RHODE ISLAND RENEWABLE ENERGY FUND

SOLAR ON SCHOOLS SOLAR ELECTRIC (PHOTOVOLTAIC) SYSTEMS AND DATA ACQUISITION AND EDUCATIONAL INTERFACE SYSTEMS REQUEST FOR PROPOSAL BID FORMS

1. Proof of Delivery
2. Bid Coversheet
3. Bid Checklist
4. Company Identification
5. References
6. Price/Warranties

1. Proof of Delivery

The attached is our submittal to the Rhode Island Renewable Energy Fund's

REQUEST FOR PROPOSAL FOR THE SUBMITTAL OF BIDS TO PROVIDE AND INSTALL SOLAR ELECTRIC (PHOTOVOLTAIC) SYSTEMS AND DATA ACQUISITION SYSTEMS FOR THE SOLAR ON SCHOOLS INITIATIVE

Delivered by signature: _____

Printed Name: _____

Company Name: _____

Received by signature: _____

Printed Name: _____

Rhode Island State Energy Office

Date: _____/_____/_____

Time: _____

Appendix B

2. BID COVERSHEET

I am authorized to enter this bid on behalf of:

_____

Company Name

_____

_____

_____

Address

in response to the Rhode Island Renewable Energy Fund's Request for Proposal to Provide Data Acquisition System, and Education Interface for Renewable Energy Systems

Name and Title of Company Representative Authorized to Enter Bid	Name:_____ Title:_____
Signature	Date

3. BID CHECKLIST

	Company Submitted Checklist	RIREF Verified Checklist
1. BID COVERSHEET		
2. BID CHECKLIST		
3. COMPANY IDENTIFICATION		
4. REFERENCES		
5. PRICE/WARRANTIES		

4. COMPANY IDENTIFICATION

Company Name	
Address:	
Contact Name	
Title	
Phone Number	
Fax Number	
Email Address	

5. REFERENCES

Project One
Description (add and reference additional pages if necessary)

Owner

Contact Name:

Contact Phone Number:

Project Two
Description (add and reference additional pages if necessary)

Owner

Contact Name:

Contact Phone Number:

Project Three	
Description (add and reference additional pages if necessary)	
Owner	
Contact Name:	
Contact Phone Number:	

6. PRICE and WARRANTIES

Submit One Sheet for Each System Bid – MAKE COPIES AS NECESSARY

SYSTEM LETTER	PRICING				INSTALLED PRICE
	Materials		Labor		TOTAL
	PV	DAEIS	PV	DAEIS	
	$	$	$	$	$_____

System PV Module DC Wattage: _____watts Inverter Manufacturer/Model: _____

Proposed Array Location: _____

_____

_____

Proposed Inverter Location: _____

_____

_____

Proposed DAEIS Location: _____

_____

_____

Warranty PV System Materials: _____

Warranty PV System Labor: _____

Warranty DAEIS Materials: _____

Warranty DAEIS Labor: _____

Include any other information that you believe would help describe the system proposed.

APPENDIX C

REQUEST FOR ACCEPTANCE OF ALTERNATE COMPONENTS

Request for Acceptance of Alternate Component(s)

Component

Manufacturer

The above specified component meets all applicable standards and codes for use in the Data Acquisition System and delivers equal or better performance.

_____
Authorized Signature

_____
Printed Name

_____ _____
Title Date

_____
Address

Attach manufacturer's specification sheets.

Send completed paperwork to:

Mr. Christopher Warfel, P.E.
ENTECH Engineering, Inc.
PO Box 871
Block Island, RI 02807

or fax: 401-466-8978
or email: cwarfel@entech-engineering.com

ENTECH Engineering, Inc. shall provide a written response regarding acceptance within three (3) days of receipt of this form, granting or denying acceptance of the alternate components.

APPENDIX D

REQUEST FOR COMMISSIONING TEST

REQUEST FOR COMMISSIONING TEST

Your Company's Name
Your Company's Address

Ms. Julia Capobianco
Rhode Island State Energy Office
Rhode Island Renewable Energy Fund-Solar on Schools Commissioning Request
One Capitol Hill
Providence, RI 02908

Dear Ms. Capobianco:

We are requesting a Photovoltaic System and Data Acquisition and Educational Interface System Commissioning Test for the Solar on Schools Project at:_____ _____.

Enclosed is the Commissioning Test Checklist with the information required for a Commissioning Test to be completed.

Appendix D

RHODE ISLAND RENEWABLE ENERGY FUND
REQUEST FOR SOLAR ON SCHOOLS PHOTOVOLTAIC SYSTEM AND DATA ACQUISITION AND EDUCATIONAL INTERFACE SYSTEM COMMISSIONING

APPLICANTS MUST PROVIDE THE FOLLOWING INFORMATION TO THE RHODE ISLAND STATE ENERGY OFFICE:

Checklist

☐ 1) A copy of the signed electrical permit and inspection

☐ 2) Copies of other required permits and inspections

☐ 3) Completed utility interconnection form if applicable (We have enclosed Narragansett Electric's)

☐ 4) Statement that NEC Article 690 signage has been completed

☐ 5) System one-line diagram showing:

A) Photovoltaic System	B) DAEIS System
●Solar Panel orientation to south and tilt and shading	●Location conduit and conductor for obtaining data from sensors.
●Solar Panel manufacturer's specifications sheet	●Location of Data Monitor
●DC Voltage of solar panels as wired in series or in parallel	●Identification of Network Interface location.
●Conductor sizes, and types, including ground	
●All disconnects, ground fault devices, circuit breakers	
●Inverter manufacturer and model number	
●DC design voltage and current input to inverter (Voc, Isc)	
●AC voltage output from inverter	

☐ 6) Proof of sale of Renewable Energy Credits towards Rhode Island's Renewable Energy Standard Requirements.

In addition, the Owner's Manual must be on site at the time of Commissioning

☐ Owner's Manual containing the following information:

Photovoltaic System
Description of System, Schematic of System, Major Component Manufacturer's Specification Cut Sheets, Maintenance Schedule, Warranties, Installer Contact Information.

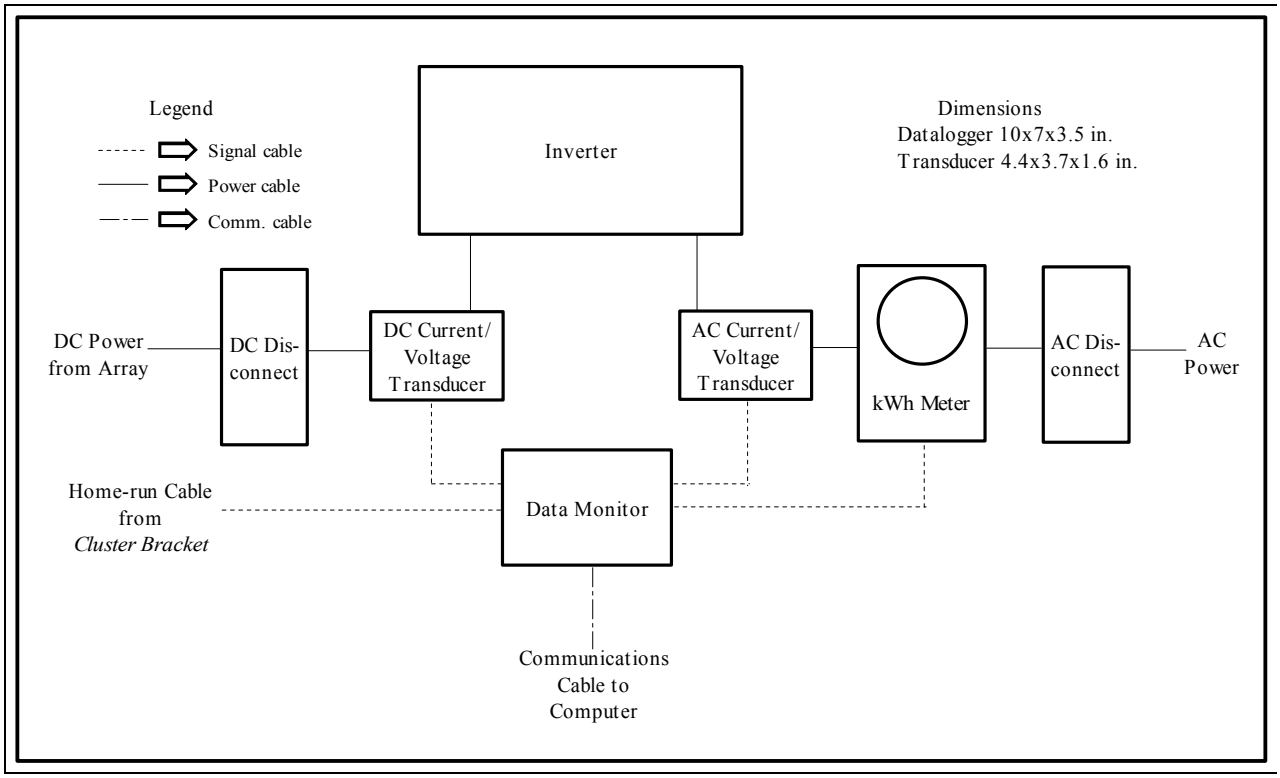
DAEIS System
Description of System, Schematic of System, Warranties, Vendor Contact Information, Installer Contact Information

As a reminder, each applicant shall:

- Obtain each local and/or state permit that applies to the renewable energy system project.
- Agree to comply with the express terms and conditions of each permit, and
- Agree to comply with all state rules and laws that apply to the renewable energy system project.

APPENDIX E

SCHEMATIC OF DATA ACQUISITION AND EDUCATIONAL INTERFACE SYSTEM COMPONENTS


Legend
Signal cable
Power cable
Comm. cable
Inverter
Dimensions
Datalogger 10x7x3.5 in.
Transducer 4.4x3.7x1.6 in.
DC Power from Array
DC Dis-connect
DC Current/ Voltage Transducer
AC Current/ Voltage Transducer
kWh Meter
AC Dis-connect
AC Power
Home-run Cable from Cluster Bracket
Data Monitor
Communications Cable to Computer

Appendix E

APPENDIX F

DATA ACQUISITION AND EDUCATIONAL INTERFACE SYSTEM INSTALLATION MANUAL

http://www.riseo.state.ri.us/riref/programs/rfp.html

APPENDIX G

PHOTOVOLTAIC SYSTEM
ACCEPTANCE TEST FORM

Worksheet for Solar Electric System Acceptance Inspection

One-line diagram comparison

_____Is a one-line diagram available at the site?
_____PV module model number matches plans and cut sheets
_____PV modules are properly grounded with lugs on each module or equivalent grounding method
_____PV array wiring is consistent with plans (# of modules)
_____Check that cable and conduit is properly supported
_____Where plug connectors are used for module wiring, inspect a sample to make sure that connectors are fully engaged
_____Inverter model number matches plans and cut sheets

Structural Attachment of Array

_____Confirm that footings and support structure match the supplied detail.
_____Confirm that module attachment matches the supplied detail.

PV System Signs

_____Do signs have sufficient durability to withstand the environment?
_____Sign Identifying Photovoltaic Power Source (at DC disconnect)
_____Operating current (provided in initial plan review)
_____Operating voltage (provided in initial plan review)
_____Maximum system voltage (690.7)
_____Short-circuit current (690.8)
_____Sign identifying AC point of connection (690.54)
_____Maximum operating current (provided in initial plan review)
_____Operating AC voltage (provided in initial plan review)
_____Sign identifying switch for alternative power system
_____Sign at the main service disconnect (702.8) notifying the type and location of the optional standby system

Other Requirements

_____Utility grade meter to be used for calculating energy and Renewable Energy Credits generated
_____Owner's Manual on site

APPENDIX H

DATA ACQUISITION AND EDUCATIONAL INTERFACE SYSTEM ACCEPTANCE TEST FORMS

RHODE ISLAND RENEWABLE ENERGY FUND SOLAR ON SCHOOLS
PROJECT MANAGEMENT TRACKING SHEET

Site	A	B	C	D
PV System				
Inverter Make and Model				
Module make model and number of modules				
System Design DC Voltage, VOC				
System Design DC Current, ISC				
System Design AC Current				
System Design AC Voltage				
PV System installation is complete				
PV System Passes Contractor's Acceptance				
PV System Passes RIREF Commissioning				
Data Monitoring Systsm				
DAS Installed				
Logger operation verified with computer, SunServer™ receiving Data light is green				
Metorological data working				
AC and DC Power working				
Energy working				
Verified that computer can see Internet (browse google)				
Internet Status light Green				
Computer & Software				
Computer on site				
Computer Meets Spec				
Software on PC at Site				
Username and PW if needed to get on computer				
Operational on-site				
Uploading data to Internet				
Computer Information				
IP address of the computer SunServer is installed on				
Computer Model Number				
Processor				
Processor speed				
RAM (Mb)				
Hard disk capacity (Gb)				
Operating System				
Service Pack				
Meets computer specs				
Location of computer in building				
Dedicated Computer				
Notes and Comments				

RHODE ISLAND RENEWABLE ENERGY FUND SOLAR ON SCHOOL
PROJECT MANAGEMENT TRACKING SHEET

Site	E	F	G	H
PV System				
Inverter Make and Model				
Module make model and number of modules				
System Design DC Voltage, VOC				
System Design DC Current, ISC				
System Design AC Current				
System Design AC Voltage				
PV System installation is complete				
PV System Passes Contractor's Acceptance				
PV System Passes RIREF Commissioning				
Data Monitoring Systsm				
DAS Installed				
Logger operation verified with computer, SunServer™ receiving Data light is green				
Metorological data working				
AC and DC Power working				
Energy working				
Verified that computer can see Internet (browse google)				
Internet Status light Green				
Computer & Software				
Computer on site				
Computer Meets Spec				
Software on PC at Site				
Username and PW if needed to get on computer				
Operational on-site				
Uploading data to Internet				
Computer Information				
IP address of the computer SunServer is installed on				
Computer Model Number				
Processor				
Processor speed				
RAM (Mb)				
Hard disk capacity (Gb)				
Operating System				
Service Pack				
Meets computer specs				
Location of computer in building				
Dedicated Computer				
Notes and Comments				

APPENDIX I

SOLAR ON SCHOOLS SYSTEM TROUBLE REPORT

SOLAR ON SCHOOLS SYSTEM TROUBLE REPORT

Host Facility Identification: _____ Date:_____ Time:_____

Contractor Identification: _____

System: Photovoltaic System ☐ DAEIS System ☐

Description of problem:_____

Action taken by Host Facility if any:

History of Contractor Response (includes dates):

Appendix I